



UNITED STATES PATENT AND TRADEMARK OFFICE

cen

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/772,970

02/05/2004

Charles A. Miller

P199-US

5200

50905 7590 02/08/2007
N. KENNETH BURRASTON
KIRTON & MCCONKIE
P.O. BOX 45120
SALT LAKE CITY, UT 84145-0120

EXAMINER

CHAN, EMILY Y

ART UNIT

PAPER NUMBER

2829

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

02/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/772,970

Applicant(s)

MILLER, CHARLES A.

Examiner

Emily Y. Chan

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-30 and 36-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-30 and 36-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/11/06.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION***Claim Rejections - 35 USC § 112***

1. Claims 16-30 and 36-45 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claims 16 and 27, the added an electrically conductive plane disposed between the conductive structure and the functional circuitry are not described in the specification and shown in the drawings. On page 30 of the specification, the applicant only describes a wafer 2124 with dies 2102,2104,2106 (functional circuitry),each die 2102,2104,2106 (functional circuitry) including communication control circuitry (conductive structure). Applicant also only describes that power and ground plans may be configured to provide power and ground connections to the dies and the power and ground planes may be embedded in insulating material 2172. The applicant never mentions that the electrical conductive planes (power and ground planes) are disposed between the conductive structure and the functional circuitry.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 16-30 and 36-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 2829

In the claims, the functional relationship among the electrically conductive plane (in claims 16 and 27), the plurality of electrically conductive planes (in claims 39 and 44), the conductive structure and the functional circuitry are not recited, therefore, the above claims are rejected for not particularly pointing out and distinctly claiming the subject matter.

Claim Objections

3. Claims 39 -45 are objected to because of the following informalities: claims 39,41 and 44 are dependent on claim 1 which is canceled, therefore, the claims 39-45 are objected for depending on the canceled claims . Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 16-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Slupsky (US Patent 6,885,202) in view of Pileggi et al (US Publication No. 2005/0138499).

With respect to claims 16 and 27, Slupsky ('202) discloses a semiconductor wafer (see Fig. 2, 30) comprising:

a plurality of dies (12) each comprising functional circuitry (see Col. 2, line 47 “ to test electronic circuits 12 on wafer 30”); and

electrically conductive structures (wireless I/O cells 14) configured to contactlessly receive test signals (see Col. 2, lines 4-5) for testing the functional circuitry (see Col. 2, lines 52-54).

Slupsky ('202) does not disclose an electrically conductive plane disposed between the conductive structures and the functional circuitry.

Pileggi et al ('499) discloses a semiconductor wafer (see Fig. 2, 204) comprising a plurality of dies (202), each comprising functional circuitry (IC) and electrically conductive structures or receiving means (transceiver 206) configured to contactlessly receive test signals for testing the functional circuitry (see page. 2, paragraph [0020], lines 4-5). More over, Pileggi et al ('499) exclusively disclose an electrically conductive plane (multiplexing circuit 212) disposed between the conductive structure (206) and the functional circuitry (202) (see page. 2, paragraph [0020], lines 1-2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to incorporate the electrical conductive plane of Pileggi et al ('499) into Slupsky ('202)'s semiconductor wafer for the purpose of coupling the conductive structure and functional circuitry to test an integrated circuit and semiconductor chip on a wafer as disclosed by Pileggi et al ('499) (see page 1, paragraph [0001]).

With respect to claim 17, Slupsky ('202) discloses that each die (12) comprises a set of said conductive structures (wireless I/O cells 14).

With respect to claim 18, Slupsky ('202) discloses each of said conductive structures (wireless I/O cells 14) in a set of said conductive structures are electrically connected to a plurality of said dies (12) (see Fig. 2).

With respect to claim 19, Slupsky ('202) discloses that the conductive structures are electromagnetically (see Col. 2, line 34, "a magnetic interface for sending and receiving signals") coupleable to a tester interface device (38).

With respect to claim 20, Slupsky ('202) discloses that a transmitter (18) (see Col. 2, line 31 "transmitter 18") configured to transmit test signals on at least one of said conductive structures (wireless I/O cells 14).

With respect to claim 21, Slupsky ('202) discloses each of said dies (12) comprises such a transmitter (18) (see Fig. 1).

With respect to claim 22, Slupsky ('202) discloses that a receiver (34) (see Col. 2, line 33 "receiver 34") configured to receive a test signals on at least one of said conductive structures (wireless I/O cells 14).

With respect to claim 23, Slupsky ('202) discloses each of said dies (12) comprises such a receiver (34) (see Fig. 1).

With respect to claim 24, Slupsky ('202) discloses that a transceiver (18, 34) (see Col. 1, "a transceiver 18"), configured to transmit test signals on at least one of said conductive structure(wireless I/O cells 14) and to receive a test signal induced on at least one of said conductive structures(wireless I/O cells 14).

With respect to claim 25, Slupsky ('202) discloses that each of said dies (12) comprises such a transceiver (see Fig. 1).

Art Unit: 2829

With respect to claim 26, Slupsky ('202) discloses a built in self test circuitry (see Col. 3, " using BIST (Built-In Self Test) techniques").

With respect to claim 28, Slupsky ('202) discloses means (38) for sending a test signal to a test channel without physically contacting said tester channel.

With respect to claim 29, Slupsky ('202) discloses that the means (wireless I/O cells 28) for receiving receives a plurality of test signals from a plurality of tester channels without physically contacting said plurality of tester channels (see Fig. 2)

With respect to claim 30, Slupsky ('202) discloses a means (computer 36) for controlling communications with a plurality of said tester channels (see Col. 2, lines 55-56).

5. Claims 36-45 are free of art rejection.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Ott (US patent No. 5,130,644) discloses a integrated circuit self-testing device (see Fig. 3) comprising a power and ground buses.

Response to Arguments

7. Applicant's arguments with respect to claims 16-30 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2829

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Y. Chan whose telephone number is 571-272-1956. The examiner can normally be reached on 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ha T Nguyen can be reached on 571-272-1678. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2829

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EC
2/1/07


VINH NGUYEN
PRIMARY EXAMINER
A-U. 2829
02/05/07